Effectiveness and perceptions of using templates in long-term condition reviews

Effectiveness and perceptions of using templates in long-term condition reviews: a systematic synthesis of quantitative and qualitative studies

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ABSTRACT

Background: Review templates are commonly used in long-term condition (LTC) consultations to standardise care for patients and promote consistent data recording. However, templates may affect interactions during the review and potentially inhibit patient-centred care.

Aim: To systematically review literature on the impact of LTC review templates on process and health outcomes, and the views of healthcare professionals and patients on using review templates in consultations.

Design and setting: Parallel qualitative and quantitative systematic reviews.

Method: Following Cochrane methodology, we searched nine databases (1995-2019; updated July 2020) for clinical trials and qualitative studies of LTC templates in healthcare settings. We performed duplicate selection, risk-of-bias assessment and data extraction. The quantitative and qualitative analyses were conducted in parallel and findings synthesised narratively.

Results: We included 12 qualitative and 14 quantitative studies (two studies reported both qualitative and quantitative data and were included in both analyses). Review templates were well used, but the only study to assess health outcomes showed no effect. Templates can improve documentation of key measures, and act as a reminder tool; however, this can restrict the review process, and risks prioritising healthcare professional agendas over patients. Templates may also limit opportunities to discuss individuals' concerns about living with their condition, and act as a barrier to providing patient-centred care.

Conclusion: Future research should evaluate health as well as process outcomes. The potential benefits of templates in improving documentation should be balanced against concerns that 'tick boxes' may override patient agendas unless templates are designed to promote patient-centred care.

Keywords: *primary care; review templates; patient-centred care; delivery of health care; chronic conditions; long-term conditions*

How this fits in: Electronic disease templates are commonly used in healthcare systems to optimise and standardise evidence-based care for patients during long-term condition reviews. However, there are concerns that review templates can be a ‘tick-box’ exercise that has a negative impact on patient-centred care. We synthesised findings from qualitative and quantitative studies exploring the utility and impact of templates in long-term condition care. Our findings highlight the need to improve template design with particular focus on supporting self-management and patient-centredness.

BACKGROUND

Long-term conditions (LTCs) account for over 15 million premature deaths each year[1], emphasising a need to invest in strategies to improve management. Contemporary healthcare for LTCs is founded on evidence-based interventions summarised in clinical guidelines which recommend management strategies to optimise outcomes and prevent complications[2]. In contrast, the role of supported self-management and patient activation is also emphasised[3, 4], and there is evidence that a patient-centred approach is associated with improved health outcomes[5-7]. LTC management should seek to bridge these two concepts by promoting healthcare professional (HCP) adherence to recommended tasks whilst simultaneously addressing the patient's needs and supporting self-management[8].

Electronic disease templates are commonly used in healthcare systems[6] to optimise, structure, and standardise evidence-based care for patients, and promote consistent data recording[6, 9]. However, concerns have been expressed that review templates encourage a checklist approach to consultations, restricting communication and reducing self-management discussion opportunities[10, 11]. Templates have also been criticised as prioritising the data needs of the institution over individual patient needs[6].

In the context of a National Institute for Health Research (NIHR) funded programme of work developing a strategy for implementing supported asthma self-management in primary care (IMP^{2}ART: IMProving IMPlementation of Asthma self-management as RouTine), we sought to understand existing qualitative and quantitative evidence related to the design of LTC templates. Specifically, we aimed to investigate the effectiveness of review templates in LTC consultations to improve process and health outcomes, and to explore HCP and patient experiences of using review templates in consultations.

METHODS

Design

Our parallel qualitative and quantitative systematic reviews (undertaken by MM; ES respectively) followed Cochrane methodology[12], and are reported according to PRISMA standards[13]. All aspects of the reviews' design (searches, inclusion/exclusion criteria, outcomes, analysis) were specified a priori in two protocols.

Search Strategy

Qualitative and quantitative searches were performed independently in June 2019 in the following databases: MEDLINE (Ovid), Embase (Ovid), Web of Science, CINAHL

(EBSCOhost), PsycINFO (Ovid), and British Nurses Index (ProQuest). Additionally, for qualitative studies, ASSIA and Sociological Abstracts (via ProQuest) were searched, and for quantitative studies the CENTRAL database was searched. We hand-searched reference lists and completed forward citation tracking of included studies. Searches commenced from 1995, when the increasing importance of guidelines and advances in technology led to the widespread adoption of computerised medical records[14] which facilitated use of templates and the secondary use of data[14]. Prior to publication (July 2020), we undertook forward citation tracking on all included studies, recognised as an efficient approach to updating reviews[15].

Definition of templates

We defined templates as forms (paper or electronic), checklists, questionnaires, proformas or smart forms, which aim to: support structured management of patients; promote a systematic approach of care delivery; enable data recording, data sharing and information retrieval; assure quality care delivery in-line with evidence-based guidelines; and/or produce aggregated data used to assess institution performance.

Search terms

Databases were searched for terms to identify review templates and long-term conditions. In addition, filters relating to methods were included e.g. ‘qualitative’, ‘randomised controlled trial’. Full search terms for the qualitative and quantitative searches are available in Supplementary Table 1.

Eligibility Criteria

Table 1 displays the qualitative and quantitative eligibility criteria guided by PICo (Population, phenomena of Interest, and Context) and PICOS (population, intervention, comparison, outcome and study design) frameworks. Studies not conducted in a healthcare setting or not published in the English language were excluded.

Study Selection

After de-duplication in Covidence (https://www.covidence.org), we screened titles/abstracts (qualitative (MM; ES); quantitative (ES; MM; EK)) and then potentially eligible full texts (MM; ES; KM) against the review criteria. All screening was done independently by two reviewers; disagreements were resolved by team discussion.

Data extraction and quality assessment

Data were extracted by MM (qualitative) and ES (quantitative) and independently checked (KM). Qualitative studies were quality assessed by MM, using The Critical Appraisal Skills Programme (CASP) checklist[16] for qualitative research. Quantitative studies were assessed for risk of bias by ES. Randomised controlled trials (RCTs) were assessed using the Cochrane risk of bias assessment tool[17], and non-randomised studies were assessed using the Risk Of Bias In Non-randomised Studies - of Interventions (ROBINS-I)[18]. All risk of bias and quality assessments were independently checked (KM).

Data Synthesis

Data from the qualitative and quantitative studies were synthesised separately using a narrative synthesis[19] due to the high level of heterogeneity across studies. An overarching synthesis and interpretation were developed with a multidisciplinary group (academics, primary care clinicians, health psychologists).

RESULTS

The qualitative search identified 12 studies, and the quantitative search identified 14 studies (Figure 1: PRISMA diagram). Two studies reported both qualitative and quantitative data and were included in both analyses[20, 21]. Characteristics and key interpretations of the included studies are shown in Supplementary Tables 2 (qualitative) and 3 (quantitative).

Study characteristics

Qualitative studies were published between 1999 and 2019 and were undertaken in Australia (n=1)[22], South Africa (n=1)[20], and the UK (n=10)[6, 9-11, 21, 23-27], in primary care practices and community health centres. The quantitative studies were published between 1999 and 2018 and were undertaken in Canada (n=1)[28]; Kenya (n=1)[29]; South Africa (n=2)[20,30]; UK (n=2)[21,31]; USA (n=8)[32-39], in primary care practices, paediatric hospitals, community health centres, ambulatory care clinics, and mobile clinics. Multiple long-term conditions were included in the studies, commonly asthma, diabetes, hypertension. Of the 24 unique studies, nine evaluated existing templates already in use in clinical practice, eight studies developed templates within a programme of research with the primary intention of embedding in routine practice, and seven studies had developed templates for research purposes that were subsequently embedded in clinical practice. Detailed study characteristics can be found in Supplementary Tables 2 and 3.

Quality and risk of bias

The qualitative quality assessment found that all but one study scored greater than 7 out of a possible 10 on the CASP checklist. The quantitative risk of bias assessment found that all four RCTs had some concerns, and all of the non-randomised studies had a moderate to serious risk of bias. Full assessment details are in Supplementary Table 4 (qualitative) and Supplementary Figures 1 and 2 (quantitative).

Overview of presentation of results

The qualitative synthesis of HCP and patient views about using review templates is described first, with illustrative quotes in Table 2. Informed by the qualitative themes (inflexible template design; competing agendas; shaping patient-practitioner interactions; impact on patient centred-care; impact on management; HCP use of templates) the quantitative findings present the impact of template use on recording of assessments; adherence to guidelines, and health outcomes.

Qualitative Synthesis

Template design and data collection

HCPs found templates acted as a reminder tool during consultations[6, 10, 20-24]. Templates established structure and made priorities clear, resulting in more efficient reviews[20, 23, 25, 26]. Conversely, rigid template design could be restrictive[11, 21] if structure was followed so closely that questions appeared out of context[25]. Furthermore, overreliance on structure reduced the HCPs opportunities to use their own medical knowledge and skills[27]. Although, some nurses expressed that templates "*make life a lot easier*" they also commented that templates mean "*you don't really have to think a lot for yourself*"[10, 23]. Templates were viewed as inflexible if they did not provide space to record important additional comments[20, 21]. Additionally, a 'tick-box' design, as opposed to free-text comments, forced HCPs to categorise patients' status, overriding nuances[11, 23].

Competing agendas

Templates encouraged HCPs to prioritise their agenda over the patients[10, 11, 25]. Patients had to work hard to integrate their own concerns into discussions and even when successful, HCPs used the template to steer patients back to tasks[11]. One template that began with an opening first question "*What is the most important health problem that you would like us to work on over the next few months?*" enquiring about the patients' agenda, was valued by HCPs and patients[6]. In some contexts, completing templates was an essential task as it was how a practice secured its income[9], therefore HCPs felt under pressure to complete tasks and 'tick the boxes' that were related to evidence-based quality indicators[10, 23, 26].

Shaping patient-practitioner interactions

Template use could reduce eye contact and disrupt dialogue[6]. When patients 'digressed' from the template tasks to talk about their concerns, some nurses used a shift in gaze towards the computer template to disturb the patients' narrative and turn attention back to the tasks[25, 27]. Templates caused less disjunction when screen positioning did not require clinicians to turn away from the patient[6]. Nurses also used body positioning to indicate that the template had their full attention by turning their whole body towards the screen, signalling disinterest and limiting the patients' narrative[25, 27]. More positively, patients became familiar with the HCPs priorities imposed by the template and knew what to expect of the review process and understood what was deemed acceptable during the review[25].

Impact on patient centred-care

HCPs acknowledged that template use could turn reviews into a tick-box exercise which inhibited patient-centred care[10, 23, 24, 26], with review appointments becoming focused on collecting data rather than an opportunity for patients to discuss treatment options for managing their condition[23]. There was a risk of HCPs avoiding discussing patients' concerns if they were not related to the condition under review[11, 25], with patients expressing dissatisfaction if their problems were not addressed[9]. Conversely, patients who were asked about their concerns responded positively and felt heard[6]. General practitioners (GPs) suggested that templates could be improved by enabling them to cater for patients with multiple conditions[22]. Some HCPs adapted their templates and practice to facilitate patient-centred care e.g. by extending appointment times, adding free-text comment boxes, employing strategies to involve patients in the review, or by hand writing notes and completing the template when the patient had left[9, 11, 21-23].

Template impact on treatment options, self-management and health promotion

Some HCPs considered that templates encouraged a pharmacological approach to management despite patients often preferring non-pharmacological options[10, 23]. Using the template, GPs shifted topics away from the patient-initiated self-management topics (e.g. reducing medication need), to a discussion of options around the need for medication[10], which may deter patients from attending reviews[23]. HCPs felt that following the template and raising multiple health promotion topics e.g. smoking, diet, alcohol, could cause upset and lead to the patient feeling criticised[10]. As a result, nurses tended to avoid these lifestyle topics to preserve the patient relationship[10]. Conversely, some nurses used the template as an excuse for asking self-management questions[10].

Healthcare professional differences in template use

Nurses, and staff with less training, felt constrained to 'obey' templates, whereas GPs were happier to override template requirements[23]. GPs often considered templates as too detailed, whereas nurses felt the detail was necessary[21]. GPs who were provided with a short template were more able to integrate it into their review[6], although they did not always explore the patient's agenda if they lacked the required expertise[6]. While nurses engaged conversationally with patients' social circumstances, most GPs referred to biopsychosocial circumstances as context for patients' health[6]. Staff with less training felt less equipped to take into account a patients' social or psychological situation[23]. Finally, nurses initiated self-management dialogue more frequently than GPs[10].

Quantitative Synthesis

Use of templates

Overall, the majority of studies reported a rapid uptake or increase in use of templates[21, 29-32, 35-38]. However, one study with some concerns about risk of bias, reported that less than 60% of patients' folders contained the template[20].

Impact on documentation

Of the 14 included studies, 11 studies (all at moderate risk of bias or with some concerns) reported that review templates significantly improved the documentation of key measures for their respective LTC [28-30, 32-39]. The studies that did not improve documentation reported lack of engagement with the research process, and excessive workload undermining the ability to complete the template[20-21].

Across the included studies, templates were reported to have the greatest effect on the process of disease management, including improved documentation of unscheduled care[32, 37, 39] and symptoms[34]. Templates were associated with a significant improvement in recording of severity[29, 32, 35, 37, 39], with a change in documentation ranging between 20% ($p=0.0013$)[29] to 73% ($p<0.001$)[39]. Significant improvement in documentation was also noted for environmental exposure (e.g. mold, occupational hazards)[29,32]. The results were mixed with regards to complications or comorbidities, and documented changes in care plans. In asthma, for example, documentation of asthma action plan provision was mixed. One study found that documentation increased (10%-74%, $p=0.001$)[37], whereas one study found no significant difference[34]. Specifically, the impact on documentation of prescribed controller medication was mixed[36, 37, 39], though, one study observed increased documentation of inhaled corticosteroid use before and after template implementation (39.4%-51.1%, $p=0.0170$)[35]. Studies of hypertensive and diabetic patients found mixed results in documentation changes of complications[20, 29]. Finally, one asthma template study reported

a statistically significant increase in documentation of changes in care plans including social work referral, subspecialty consultation, and medicine change (49%-63%, p=0.0006)[32]. The only study to report on family history (e.g. history of smokers in family) did not report a significant change in documentation[34].

Impact on health outcomes

The only study (with some concern about risk of bias) to report on health outcomes showed no significant effect on glycaemic control for diabetic patients or blood pressure control for hypertensive patients following the introduction of a template 1-year previously[20].

DISCUSSION

Summary

We identified 24 unique studies investigating the use of templates in review consultations. The overarching findings show that even when templates are well used, there is no evidence to suggest that they improve health outcomes. HCPs perceived that templates were a helpful reminder tool during consultations, and the controlled trials confirmed that they could improve documentation of key measures in terms of adherence to guidelines. Templates were seen positively for structuring reviews and establishing clear priority tasks, but conversely were perceived as restricting the review process to 'ticking-boxes', and risked prioritising the HCP agenda over the patients. Templates may limit the opportunity to discuss self-management topics, and may act as a barrier to providing patient-centred care.

Strengths and limitations

This is the first systematic review to synthesise the effectiveness of review templates in LTC consultations with the views and experiences of HCPs and patients. The multidisciplinary team approach and duplication of the selection processes used in this review strengthen the findings. However, there are some limitations to the current review that should be noted. Although we used broad search terms, and screened 13,977 studies, we may have missed some relevant studies including any non-English studies (we did not have the resources for translation). Qualitative studies can be difficult to detect, but we reached data saturation in the themes. The quantitative studies included in this review were assessed to be of either moderate to serious risk of bias, reducing the strength of the evidence presented. Further, the studies were heterogeneous, with varying LTCs and review templates, and initiated in diverse contexts, precluding meaningful meta-analysis.

Comparison with existing literature

The current review found that templates improved the documentation process [28-30, 32-39], but with no evidence of improved health outcomes. This supports a prior review that showed that electronic medical records have process benefits, but unclear improvements in clinical outcomes[40]. We also found that templates can act as a barrier to providing patient-centred care, which corroborates previous concerns that use of electronic health records negatively impacted on patient-centred communication[41]. Patient-centred care is important for patients with long-term conditions[42], and evidence suggests that long-term patient outcomes may be improved when patients are involved in their treatment planning that requires self-management[43]. This represents a tension in contemporary clinical practice with policy rewarding both increased coding of guideline recommended practice in pay for performance schemes[44], whilst simultaneously promoting personalised care[45-46]. Increasing use of routine data and the 'power of information' is an additional driver for collection of process data[47], risking further marginalisation of the patient's agenda. Template design could help – or hinder – the challenge of managing this tension.

Implications for research and practice

There are a number of reasons why researchers, clinicians, and health service managers introduce templates into clinical practice. If improving processes or recording of processes is the aim, then our findings suggest that templates have utility. In contrast, our review found very little evidence about the potential of templates to improve clinical outcomes (though absence of evidence is not evidence of absence). Researchers developing or evaluating templates need to define their objective(s), consider the mechanism by which they believe a template can achieve that objective, and measure outcomes that demonstrate whether the objective has been achieved. In addition, the benefits need to be balanced against the perception that templates can reduce the patient focus of a consultation.

To improve patient-centredness, templates should begin with an opening first question to establish the patient's agenda[6], and should incorporate questions that ask patients about their main health concerns to allow initiation of discussion[22]. Additionally, findings identified that patients feel dissatisfied with their unaddressed problems[9]; a closing template question to check if the patients concerns had been addressed may alleviate this. The current review found that templates were viewed as inflexible[20, 21], and studies suggested that templates should incorporate open text or flexible options that help balance patient and HCP agendas and allow for documentation of patient concerns and multiple conditions[9, 22]. Finally, existing evidence shows that supported self-management can reduce hospitalisations, accident and emergency attendances and unscheduled consultations[48], therefore, as suggested by an included study[10], templates should incorporate more self-management questions and

education to aid HCPs to encourage and educate patients in self-management practices. The IMP^{2}ART programme of work developing a strategy for implementing supported asthma self-management in primary care will use these findings in the development of an asthma review template.

Conclusion

Review templates were well used, although limited evidence does not suggest that they improve patient-related outcomes. Templates can improve documentation of key measures, and act as a reminder tool during consultations; however, this can restrict the review process, and risks prioritising the healthcare professional agenda over the patients' concerns and act as a barrier to providing patient-centred care. Understanding and managing these potentially conflicting imperatives could lead to improved design of templates for use in the management of long-term conditions.

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Competing interests: The authors have declared no competing interests.

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Table 1. Inclusion and Exclusion Criteria

Qualitative Search Inclusion and Exclusion Criteria, following PICo framework.		
	Inclusion	Exclusion
Population	Patients with LTCs and healthcare professionals managing patients with long-term conditions	Patients without a LTC, and healthcare professionals' management of patients without a long-term condition
phenomena of **I**nterest	Studies that explore the use of review templates (electronic or paper) in the clinical management of LTCs	Computerised decision support systems; other reminders or record systems
Context	Studies exploring views and experiences of review templates for clinical management of LTCs, from the patient or healthcare professional perspective	
Quantitative Search Inclusion and Exclusion Criteria, following PICO framework.		
	Inclusion	Exclusion
Population	Healthcare professionals working in LTC care	Non-healthcare professionals, non-LTC review consultations
Intervention	Electronic or paper review templates meeting our definition	Computerised decision support systems; other reminders or record systems
Comparison	Standardised/regular LTC care not using templates	
Outcome	Primary: related to process; comprehensiveness, compliance with guidelines, frequency of use Secondary: related to patient health outcomes; unscheduled care, symptom control	No report on any outcomes of interest
Study design	Randomised controlled trials, quasi-experimental, non-randomised studies, mixed-method	

Table 2. Illustrative Quotes of Identified Themes.

Template Design & Data Collection	Nurse: "*I think they're absolutely spot on, the templates. They're just like reminders to make sure you don't miss anything and they just make life a lot easier, basically*." (Checkland et al., 2007)[23] GP: *"I don't want a load of prompts and a load of forms to fill in and click and buttons."* (Mann et al., 2018)[6]
Competing Agendas	Nurse: "*That becomes number crunching, ticking boxes and that's the bit I don't like*." (Checkland et al., 2007)[23]
Shaping patient-practitioner interactions	GPs: Templates were too "*business focused and took away from real doctoring*." (Schattner et al., 2008)[22]
Impact on Patient Centred-Care	Nurse: "*You spend more time looking at the screen and ticking boxes than actually looking at the person who's come to see you, which is not very nice for the patient."* (Wilson, 2019)[26] Patient: *"This gives me that kind of overview where you think "well I'm the person that's getting attended here, it's not what this GP wants or thinks it's what … my needs are"."* (Mann et al., 2018)[6]
Template impact on treatment options, self-management and health promotion	Nurse: "*I mean she was feeling a bit sort of got at, the fact that I'd already had the diet and the alcohol. And then smoking was the last straw really*." (Blakeman et al., 2011)[10]
Healthcare professional differences in template use	Nurse: *"Yeah, you've got an agenda. They may well have an agenda. And I tend to, rightly or wrongly, get my agenda first. You know, make sure my agenda's done."* (Blakeman et al., 2011)[10] GP: *"There will be another agenda I'll be running side by side…I've been able to cope ok with that."* (Checkland et al., 2007)[23]